EXHIBIT 14

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providers (those operated by a telephone company use channel 0334).

IPCI See Integrated Personal Computer Interface.

ipconfig A utility program used to list various Internet Protocol configuration information, including host address, subnet mask, and gateway addresses.

IPCP IP Control Protocol; protocol for transporting IP traffic over a PPP connection.

IPDC Internet Protocol Device Control. See MGCP and Simple Gateway Control Protocol.

IPDR Internet Protocol Data Record. A developing standard for an open billing method for IP (Internet Protocol) traffic. IPDR is intended to specify a common format for billing records and billing procedures in order that IP-based carriers can exchange billing information easily and, thereby, to enable the internetwork provisioning and billing of a wide variety of value-added IP-based services and applications. IPDR is an initiative of IPDR.org.

IPDS Intelligent Printer Data Stream. It's IBM's host-to-printer page description protocol for printing. You can now buy kits which let you use your present printer to emulate an IBM printer.

IPE Intelligent Peripheral Equipment. Northern Telecom's term for being able to extend all the features of its PBX over distances longer than a normal extension in a building. See Fiber Remote.

IPEI International Portable Equipment Identities. A wireless term.

IPEM If the Product Ever Materalizes.

IPIC IntraLATA Primary Interexchange Carrier.

IPL Initial Program Load.

IPLC International Private Leased or Line Circuit.

IPM Interruptions Per Minute or Impulses Per Minute.

IPND Integrated Public Number Database.

IPNG IPng. IP Next Generation. Collective term used to describe the efforts of the Internet Engineering Task force to define the next generation of the Internet Protocol (IP) which includes security measures, as well as larger IP addresses to cope with the explosive growth of the Internet. The were three candidate protocols for IPng (CATNIP, TUBA and SIPP), were blended into IPv6, which is in trial stages at the time of this writing. See IPv6.

IPNS International Private Network Service. It actually international private line service and it's typically a circuit from 9.6 Kbit/sec up to T-1 or E-1. Domestically you would simply call it "Private line data service."

IPP IPP is the Internet Print Protocol, a collection of IETF standards developed through the Printer Work Group, www.pwg.org, that will make it as easy to print over the Internet as it is to print from your PC. IPP uses the HTTP protocols to "POST" a supported MIME Page Description Language file to a printer. Printers are given Internet addresses such as, www.mydomain.com/ipp/my_printer, so they can be located on the Internet. IPP has the support of all the major printer companies including, Xerox, HP, Lexmark, IBM as well as Novell and Microsoft. Since fax, at a sufficient level of abstraction, is "remote printing," work is under way to create a Fax Profile for IPP as well, so that IPP can duplicate the legal as well as common practices of fax transmissions. Richard Shockey. Rshockey@ix.netcom.com contributed this definition. Thank you.

IPO Initial Public Offering. Start a company. Some years later, take it public. Come out at $12. A week later, your stock is at $24. You're a success, and rich. IPOs are critical in saying "Thank You" to all your hardworking employees. See also Initial Public Offering.

iPOD IP (Internet Protocol) Phone over Data. There tend to be two variations — emulation and driving. The emulation iPOD connects directly to digital station ports on a PBX and emulates a digital PBX feature phone. The emulation iPOD also enables the new PC IP PBX vendors to interoperate with enterprise PBXs. The driving iPOD drives digital PBX phones in the same fashion as if the phone were connected directly to a PBX station circuit card. The driving iPOD can enable the new PC PBX vendors to use existing desk sets in the enterprise. Both versions of the iPOD provide a TCP/IP interface for the purpose of transporting the voice and call control signaling associated with a PBX digital station call over a packet network. Protocols, DSP algorithms, densities and different form factors all constitute possible platform variations.

IPR Intellectual Property Rights.

IPRS Internet Protocol Routing Service. Defined by Bell Atlantic as "a low-cost access service for ISPs. This service supports basic dial, ISDN, and dedicated requirements for transparent connectivity from the end-user to the ISP."

IPS 1. Internet Protocol Suite. See also IPS7.

2. Inches Per Second. A measurement of the speed of tape movement. Industry standards are as follows: 15132 ips, 15116 ips, 1-718 ips, 3-314 ips, 7-112 ips, 15 ips.

3. Intrusion Protection System. See NIP.

IPS7 Internet Protocol Signaling 7. A Nortel initiative for a standardized signaling and control protocol between PSTN networks and multimedia IP-based networks. SS7 (Signaling System 7) is the international standard for signaling and control in the circuit-switched PSTN (Public Switched Telephone Network). There is no standard protocol for VoIP (Voice over Internet Protocol), and no standard protocol for the interexchange of signaling and control messages between VoIP networks and the PSTNs. Such interexchange is required in order that support for CLASS (Custom Local Access Signaling Services) services (e.g., Call Forwarding, Call Waiting, and Calling Line ID) can be supported seamlessly across the PSTN and VoIP networks. A standard, open architecture for IPS7 has been submitted by Nortel to the IETF (Internet Engineering Task Force) for its consideration. See also IP, PSTN, SS7, and VoIP.

IPsec A collection of IP security measures that comprise an optional tunneling protocol for IPv6. IPsec supports authentication through an "authentication header" which is used to verify the validity of the originating address in the header of every packet of a packet stream. An "encapsulating security payload" header encrypts the entire datagram, based on the encryption algorithm chosen by the implementer. See also Authentication, Encryption, IPv6, and Tunneling.

IPT IP Telephony.

IPT Gateway IP Telephony Gateway. Imagine you and I work for a company which has a PBX — a telephone system. You dial 234 to reach Harry. You dial 9 and a long distance number to dial your biggest client in Los Angeles. Now imagine you want to call your the company's branch office in London. You dial 22. You hear a dial tone. You then punch in 689. You hear another dial tone. Then you punch 123. Bingo, the boss of the London office answers. Here's what all those numbers mean. Dialing 22 dials you into a PC called the IP Telephony Gateway, which, on the one side, is connected to your PBX and on the other side is connected to a data line your company has between your office and your London office. Dialing 689 is you telling the IPT Gateway that you want to speak to the PBX in your London office. Dialing 123 tells the London PBX to dial extension 123.

That connection between your PBX and your London office's PBX might be anything from a dedicated private data line (e.g. part of your company's Intranet), to a virtual circuit on a Virtual Private Network (VPN) or it might be the public Internet. The IPT Gateway's major function is to convert the analog voice coming out of your PBX into VoIP (voice over Internet Protocol) and then send it on a packet switched data circuit which conforms to the IP. In short, an IPT Gateway allows users to use the Internet (or most likely an Intranet or Virtual Private Network) to talk with remote sites using (Voice over Internet Protocol).

IPTC On April 30, 1998, Ericsson Inc. released a press release which contained, inter alia, "Ericsson Inc. has developed a new IP telephony platform called Internet Telephony Solution for Carriers (IPTC) that raises the standard for IP telephony systems. IPTC offers phone-to-phone, fax-to-fax and PC-to-phone services over a TCP/IP network. It provides a superior operations and management (O&M) facility that moves IP telephony to a true carrier-class communications system. IPTC works by taking phone and fax calls that originate in the public switched telephony network (PSTN) and passing them to the IPTC platform, which carries them over the TCP/IP network to their destination where they are fed back to the PSTN network. PC-to-phone calls are taken directly from the TCP/IP network and carried to their destination in the same way...IPTC software runs on industry standard platforms that are based on Intel Pentium processors and Microsoft Windows NT...IPTC uses a Web-based management program to update and control multiple gateways. No longer is it necessary to change the parameters in individual gateways when IPTC can update all gateways within a network through one "netkeeper" applications program. The call and traffic control for individual gateways in a network is handled by sitekeepers. The sitekeepers connect to the netkeeper, which acts as a single point of control for the O&M functions of the whole IPTC platform. The netkeeper is not involved in the processing of calls but stores the platform topology information, routing configuration and alarm information. Other features included in the IPTC platform are least-cost routing, dynamic route allocation, multiple IP networks support, and the ability to handle validated and un-validated traffic. Real-time billing with fraud prevention and call duration advice with integrated voice response software is also provided."

IPTV Internet Protocol television. IPTV is a Microsoft project. The technology is designed to let telecommunications and cable companies offer new subscriber services that use their two-way broadband networks. Planned features for Microsoft IPTV include instant channel changing, interactive programming guides with integrated video and multiple picture-in-picture capability on standard TV sets. Microsoft said the technology will support high-defini-

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demand.

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tion television, "next-generation" (whatever that is) digital video recording and video-on-demand.

IPU Intelligent Processing Unit. Another way of saying CPU. See CPU. Also Intelligent Peripheral Unit, the hardware associated with an intelligent peripheral. Also Alcatel's parlance for an actual workstation that's associated mostly with one of Alcatel's applications called the local applications platform or LAP and a software applications package called the monitor reset controller-2 or MRC-2. In short, everyone is using IPU to mean whatever cool thing they want it to mean. Certainly sounds cool.

IPv4 Internet Protocol Version 4. The current version of the Internet Protocol, which is the fundamental protocol on which the Internet is based. Although its roots are in the initial development work for ARPAnet, IPv4 was first formalized as a standard in 1981. Since that time, it has been widely deployed in all variety of data networks, including LANs and LAN internetworks. While IPv4 served its purpose for some 25 years, it has lately proved to be inadequate, largely in terms of security and limitations of the address field. The address field is limited to 32 bits; although 2 to the 32nd power is a very large number, we are running out of IP addresses just as we have run out of 800 numbers and traditional area codes. Hence, the development of IPv6. See IP.

IPv5 Internet Protocol Version 5. IPv5 is not exactly a missing link, although it might appear so. Rather, IPv5 was assigned to ST2, Internet Stream Protocol Version 2, which is documented in RFC 1819. ST2 is an experimental protocol developed as an adjunct to IP for support of real-time transport of multimedia data. See IP and IPv6.

IPv6 Internet Protocol Version 6. The new proposed Internet Protocol designed to replace and enhance the present protocol which is called TCP/IP, or officially IPv4. IPv6 has 128-bit addressing, auto configuration, new security features and supports real-time communications and multicasting. IPv6 is described in RFC 1752, The Recommendation for IP Next Generation Protocol, including the strengths and weaknesses of each of the proposed protocols which were blended to form the final proposed solution. At the time of this writing, IPv6 is standardized, but not widely deployed. It requires upgrades that are expensive. They will be fork-lift upgrades in many cases. Therefore, IPv6 is being deployed pretty much only in the NextGen carrier networks, which are being built from the ground up. IPv6 offers 128-bit addressing, auto configuration, new security features and supports real-time communications and multicasting. The 128-bit addressing scheme will relieve pressure on the current 32-bit scheme, which is nearly exhausted due to the widespread use of IP in the Internet and a wide variety of LAN, MAN and WAN networks. Clearly, 2 to the 128th power is a huge number, yielding a staggering number of IP addresses. According to Mark Miller of Diginet Corporation, it equates to approximately 1,500 addresses per square angstrom, with an angstrom being one ten-millionth of a millimeter. Another way of looking at this is that IPv6 yields about 32 addresses per square inch of dry land on the earth's surface — in other words, we are not likely to run out of IPv6 addresses. (Don't be surprised to see your telephone assigned an IP address in the future.)

Autoconfiguration Protocol, an intrinsic part of IPv6, allows a device to assign itself a unique IP address without the intervention of a server. The self-assigned address is based in part on the unique LAN MAC (Media Access Control) address of the device, which might be in the form of laptop computer. This feature allows the user the same full IPv6 capability when on the road as he might enjoy in the office when the laptop is inserted into a LAN-attached docking station. IPv6 security is provided in several ways. Data integrity and user authentication are provided by any of a number of authentication schemes. Second, the Encapsulating Security Payload feature provides for confidentiality of data through encryption algorithms such as DES (Data Encryption Standard). Several different types of IPv6 addresses support various types of communications. Unicast supports point-to-point transmission, Anycast allows communications with the closest member of a device group, and Multicast supports communications with multiple members of a device group.

IPX Internet Packet eXchange. Novell NetWare's native LAN communications protocol, used to move data between server and/or workstation programs running on different network nodes. IPX packets are encapsulated and carried by the packets used in Ethernet and the similar frames used in Token-Ring networks. IPX supports packet sizes up to 64 bytes. Novell's NCP and SPX both use IPX. See also IPX.COM.

IPX Autodiscovery The ability of a network manager to discover the node address and functionality of network devices.

IPX.COM The Novell IPX/SPX (Internetwork Packet eXchange/Sequenced Packet eXchange) communication protocol that creates, maintains, and terminates connections between network devices (workstations, file servers, routers, etc.). IPX.COM uses a LAN driver routine to control the station's network board and address and to route outgoing data packets for delivery on the network. IPX/SPX reads the assigned addresses of returning data and directs the data to the proper area within a workstation's shell or the file server's operating system. See also Netware.

IPX/SPX Internetwork Packet Exchange/Sequenced Packet Exchange. Two network protocols. IPX is NetWare protocol for moving information across the network; SPX works on top of IPX and adds extra commands. In the OSI model, IPX conforms to the network layer and SPX is the transport layer.

IPXCP IPX Control Protocol; protocol for transporting IPX traffic over a PPP connection.

IPXWAN A Novell specification describing the protocol to be used for exchanging router-to-router information to enable the transmission of Novell IPX data traffic across WAN (Wide Area Network) links.

IR 1. Infrared. The band of electromagnetic wavelengths between the extreme of the visible part of the spectrum (about 0.75 um) and the shortest microwaves (about 100 um). See Infrared and Infrared Technology.

2. Internet Registry. See also Internet Assigned Numbers Authority.

3. Investor Relations. That part of the company which handles investors — private or institutions.

4. Intermediate Reach. The distance specification for optical systems that operate effectively from 3 to 20 km (1.8 to 12.5 mi).

IRAC International Radiocommunications Advisory Committee. A committee established to provide advice to the Australian Communications Authority regarding international radiocommunications matters.

IRAM Intelligent RAM. The idea is to put a microprocessor into a memory chip — a move that dramatically improve computer performance.

IRC 1. International Record (i.e. non-voice) Carrier. One of a group of common carriers that, until a few years ago, exclusively carried data and text traffic from gateway cities in the U.S. to other countries. The distinction between international companies providing "record" and data has eroded and now both types of companies provide voice and data services internationally.

2. Internet Relay Chat. IRC is another Internet-based technology, like FTP, Telnet, Gopher, and the Web. Described in RFC 1459, IRC is live text communication between two or groups of people that uses special IRC software and ASCII commands. Each IRC is delegated to a single channel and each channel is dedicated to a different area of interest. Users enter the IRC channel on the basis of a "nick" (nickname). IRC requires special software, use of complicated ASCII-based commands and it doesn't have a graphical interface, so people more generally use World Wide Web-based chat rooms instead. See also Internet.

3. Interference Rejection Combining. A cellular term.

IRD Integrated Receiver/Descrambler. A receiver for satellite signals that also decodes encrypted or scrambled signals. Especially used in the cable TV business.

IrDA 1. A suite of protocols for infrared (IR) exchange of data between two devices, up to one meter apart (20 to 30 cm for low-power devices). IrDA devices typically have throughput of up to either 115.2 Kbps or 4 Mbps. IrDA protocols are implemented in some cell phones, PDAs, printers and laptop computers. Specific standards have been set for Serial Infrared Link (SIR), Infrared Link Access Protocol (IrLAP), and Infrared Link Management Protocol (IrLMP). IrLAP explains how link initialization, device address discovery, connection start-up (including link data rate negotiation), information exchange, disconnection, link shutdown, and device address conflict resolution occur on an IR connection. IrLAP implements the high-level data-link control (HDLC) communications protocol for infrared environments; the rules for discovery and address-conflict resolution are IrLAP's most significant departure from HDLC. Transmission speeds included in the specifications range from 1.152 Mbps to 4.0 Mbps. Imagine that you're carrying around a small portable laptop, PDA or other device and you want to exchange data with your desktop, you simply aim the device at your desktop PC and transmit information back and forth. IrDA works like a charm. I've used it many times. I simply aim the back of my laptop at the back of another laptop. All of a sudden, one laptop's taskbar will pop up with a message "I smell another IrDA port. Want to transfer something." It pops up a screen asking you which file you want to send or receive....It couldn't be easier. frankly, I was surprised. It's a great tool for casual file transfer — like the time I had given a PowerPoint presentation to some students at MIT and one asked for a copy of the presentation. I simply aimed my laptop at his...and bingo, my file was his. See also Infrared, IrLAP and IrLMP.

2. InfraRed Data Association. A not-for-profit organization formed in 1993 to set and

Access Control A technique used to define or restrict the rights of individuals or application programs to obtain data from, or place data into, a storage device. Similarly, access to system logic is controlled on the basis of appropriate Access Codes. See Access Code.

Access Control Field 1. A term specific to Synchronous Multimegabit Data Service (SMDS), the Access Control Field controls access to the shared DQDB (Distributed Queue Dual Bus) which, in turn, provides access to the SMDS network. It consists of a single octet which is a portion of the 5-octet header of an SMDS cell. See also SMDS.

2. A Token Ring term. A field comprising a single octet (eight bits) in the header of a Token Ring LAN frame. Three Priority (P) bits set the priority of the token, a single Token (T) bit denotes either token or a frame, a Monitor (M) bit prevents frames or high-priority tokens from continuously circling the ring, and three Priority Reservation r bits allow a device to reserve the token for network access the next time the token circles the ring. See also Token Ring.

Access Control List ACL. Most network security systems operate by allowing selective use of services. An Access Control List is the usual means by which access to, and denial of, services is controlled. It is simply a list of the services available, each with a list of the computers and users permitted to use the service.

Access Control Message A message that is a user request, a resource controller response, or a request/response between resource controllers.

Access Control Method Set of rules which determine the basis on which devices are afforded access to a shared physical element, such as a circuit or device. In a Local Area Network environment, it regulates each workstation's physical access to the transmission medium (normally cable), directs traffic around the network and determines the order in which nodes gain access so that each device is afforded an appropriate level of access. By way of example, token passing is the technique used by Token Ring, ARCnet, and FDDI. Ethernet makes use of CSMA/CD or CSMA/CA; DDS makes use of a polling technique. See Media Access Control. (MAC).

Access Control System A system designed to provide secure access to services, resources, or data; for computers, telephone switches or LANs.

Access Controls An electronic messaging term. Controls that enable a system to restrict access to a directory entry or mailbox either inclusively or exclusively.

Access Coordination An MCI definition. The process of ordering, installing, and maintaining the local access channel for MCI customers.

Access Coupler A device placed between two fiber optic ends to allow signals to be withdrawn from or entered into one of the fibers.

Access Customer Name Abbreviation See ACNA.

Access Device The hardware component used in the signaling controller system: access server or mux.

Access Envy When I surf the web at two million bits per second (download) and you surf it at only 28,800 bits per second, you have a serious case of access envy, namely you envy my high speed.

Access Event Telcordia definition for information with a logical content that the functional user and the Network Access FE (Functional Entity) exchange.

Access Floor A system consisting of completely removable and interchangeable floor panels that are supported on adjustable pedestals or stringers (or both) to allow access to the area beneath.

Access Function An intelligent network term. A set of processes in a network that provide for interaction between the user and a network.

Access Group All terminals or phones that have identical rights to use the computer, the network, the phone system, etc.

Access Level Used interchangeably with Access Code. "Level" in dialing tends to mean a number.

Access Line A telephone line reaching from the telephone company central office to a point usually on your premises. Beyond this point the wire is considered inside wiring. See Local Loop and Access Link.

Access Link The local access connection between a customer's premises and a carrier's POP (Point Of Presence), which is the carrier's switching central office or closest point of local termination. That carrier might be a LEC, IXC or CAP/AAV; in a convergence scenario, the carrier might also be a CATV provider.

Access List List kept by routers to control access to or from the router for a number of services (for example, to prevent packets with a certain IP address from leaving a particular interface on the router).

Access Manager 1. An element in some architecture implementations of a PCS infrastructure that includes functions such as subscriber registration and authentication. It may include the Home Location Register, HLR, and Visitor Location Register, VLR.

2. A means of authorization security which employs scripting.

Access Method The technique or the program code in a computer operating system that provides input/output services. By concentrating the control instruction sequences in a common sub-routine, the programmer's task of producing a program is simplified. The access method typically carries with it an implied data and/or file structure with logically similar devices sharing access methods. The term was coined, along with Data Set, by IBM in the 1964 introduction of the System/360 family. It provides a logical, rather than physical, set of references. Early communications access methods were primitive; recently they have gained enough sophistication to be very useful to programmers. Communications access methods have always required large amounts of main memory. In a medium size system supporting a few dozen terminals of dissimilar types, 80K to 100K bytes of storage is not an unusual requirement. The IEEE's 802.x standards for LANs and MANs. See Access Methods.

Access Methods Techniques and rules for figuring which of several communications devices — e.g. computers — will be the next to use a shared transmission medium. This term relates especially to Local Area Networks (LANs). Access method is one of the main methods used to distinguish between LAN hardware. How a LAN governs users' physical (electrical or radio) access to the shared medium significantly affects its features and performance. Examples of access methods are token passing (e.g., ARCnet, Token Ring and FDDI) and Carrier Sense Multiple Access with Collision Detection (CSMA/CD) (Ethernet). See Access Method and Media Access Control.

Access Minutes The term Access Minutes or Access Minutes of Use is used by NECA (the National Exchange Carrier Association) and the FCC in measuring traffic between LATA service providers (CLECs or ILECs) and IXCs (IntereXchange Carriers). The formal definition is "Access Minutes or Access Minutes of Use is that usage of exchange facilities in interstate or foreign service for the purpose of calculating chargeable usage. On the originating end of an interstate or foreign call, usage is to be measured from the time the originating end user's call is delivered by the telephone company and acknowledged as received by the interexchange carrier's facilities connected with the originating exchange. On the terminating end of an interstate or foreign call, usage is to be measured from the time the call is received by the end user in the terminating exchange. Timing of usage at both the originating and terminating end of an interstate or foreign call shall terminate when the calling or called party disconnects, whichever event is recognized first in the originating or terminating end exchanges, as applicable." This comes from the FCC's 69.2 Definitions.

Access Network Several wholesale carriers define access network as the fiber connection and associated electronic equipment that link a core network to Points of Presence (POPs) and on to Points of Interconnect (POIs) switch locations.

Access Node Access nodes are points on the edge of a network which provide a means for individual subscriber access to a network. At the access node, individual subscriber traffic is concentrated onto a smaller number of feeder trunks for delivery to the core of the network. Additionally, the access nodes may perform various forms of protocol conversion or adaptation (e.g. X.25, Frame Relay, and ATM). Access nodes include ATM Edge Switches, Digital Loop Carrier (DLC) systems concentrating individual voice lines to T-1 trunks, cellular antenna sites, PBXs, and Optical Network Units (ONUs).

Access Number The telephone number you use to dial into your local Internet Service Provider (ISP). To connect to the Internet you must first establish an account with an ISP in your area. Usually you will receive a list of telephone numbers you can use to "dial-in" to the service.

Access Organization An entity which originates program material for transmission over the access channel capacity of a cable television system. An access organization may be an individual, a non-profit corporation, an unincorporated non-profit association, or a for-profit corporation. However, under most cable franchises, commercial advertising is prohibited on Public, Educational, and Government Access channels.

Access Phase In an information-transfer transaction, the phase during which an access attempt is made. The access phase is the first phase of an information-transfer transaction.

Access Point 1. A point where connections may be made for testing or using particular communications circuits.

2. A junction point in outside plant consisting of a semipermanent splice at a junction between a branch feeder cable and distribution cables.